

CLAIMS

1 1. An apparatus for dissecting tissue in a substantially uniform plane of
2 dissection, the apparatus comprising:
3 a housing configured to be advanced under a tissue layer and control one of a depth of
4 dissection or tissue flap thickness; housing being configured to thermally shield at least a
5 portion of the tissue flap;
6 a roller coupled to housing, the roller configured to smoothly advance housing over
7 tissue; and
8 an energy delivery device coupled to housing, the energy delivery device configured
9 to be coupled to an energy source, the energy delivery device having a geometry substantially
10 defining a plane of dissection.

1 2. An electro-surgical apparatus, comprising:
2 an electrode with a cutting edge; and
3 a housing coupled to the electrode and including a top with a top proximal section and
4 a bottom with a bottom proximal section, the top proximal section having a geometry that
5 facilitates creation of a skin flap with a substantially uniform thickness that includes a skin
6 layer and an adjacent layer of subcutaneous tissue, the bottom proximal section having a
7 geometry that preserves a plane of tissue that is positioned adjacent to the adjacent layer of
8 subcutaneous tissue .

1 3. The apparatus of claim 2, wherein the housing includes a gap between the top
2 proximal section and the bottom proximal section.

1 4. The apparatus of claim 2, wherein the housing includes a chamber that
2 facilitates creation of the skin flap.

1 5. The apparatus of claim 2, wherein the bottom proximal section has a most
2 proximal point at "A", and the top proximal section has a most proximal point at "B",
3 wherein A is more proximal than B.

1 6. The apparatus of claim 5, wherein the bottom proximal section is defined by
2 point A and a more distal point "C".

1 7. The system of claim 6, wherein the electrode extends from Point A to point B.

1 8. The system of claim 7, wherein the electrode forms the hypotenuse of a
2 triangle defined by points A, B, and a point "D" which is positioned at a more proximal
3 position than point B.

1 9. The system of claim 8, wherein the bottom proximal section forms a
2 hypotenuse of a triangle defined by points A, C and a point "E", wherein E is more proximal
3 than point C.

1 10. The system of claim 9, wherein the distance between points D and A is 1 mm
2 to 2.5 cm.

1 11. The system of claim 9, wherein the distance between points D and B is 0 mm
2 to 1.5 cm.

1 12. The system of claim 9, wherein the distance between points A and E is 0mm
2 to 1.5 cm.

1 13. The system of claim 9, wherein the distance between points
2 E and C is 0 mm to 1.5 cm.

1 14. The apparatus of claim 2, further comprising:
2 an insulator coupled to at least a portion of the electrode.

1 15. A dissection apparatus, comprising:
2 an energy delivery device with an energy delivery surface; and
3 a housing coupled to the energy delivery device, the housing including a guide
4 configured to permit the energy delivery surface provide a surgical plane of dissection to free
5 a skin section and an underlying thickness of subcutaneous tissue while preserving an
6 adjacent plane of tissue.

1 16. The apparatus of claim 15, wherein the energy delivery device is an electro-
2 magnetic energy delivery device.

1 17. The apparatus of claim 15, wherein the energy delivery device is an RF
2 electrode.

1 18. The apparatus of claim 17, wherein the energy delivery surface is a cutting
2 surface.

1 19. A tissue dissection apparatus, comprising:
2 an electrosurgical energy delivery device with an electrosurgical cutting edge; and
3 a housing coupled to the energy delivery device, the housing including a guard that
4 guides and facilitates a dissection to create a surgical plane of dissection to free a skin section
5 and an underlying thickness of subcutaneous tissue while preserving an adjacent plane of
6 tissue.

1 20. A method of creating a tissue effect, comprising:
2 providing an electro-surgical device that includes an energy delivery device with an
3 energy delivery surface, a housing coupled to the electrode with a guide that provides for
4 cutting a skin layer and an underlying thickness of subcutaneous tissue while preserving an
5 adjacent plane of tissue;
6 positioning the energy delivery surface at the skin surface;
7 delivering sufficient energy from the energy delivery device to cut the skin surface
8 and the underlying thickness of subcutaneous tissue at a selected depth while preserving the
9 adjacent plane of tissue.

1 21. The method of claim 20, wherein the selected depth is no more than 2 inches.

1 22. The method of claim 20, wherein the selected depth is no more than 1 inch.

1 23. The method of claim 20, wherein the selected depth is no more than 0.75 inch.

1 24. The method of claim 20, wherein the selected depth is no more than 0.50 inch.

1 25. The method of claim 20, wherein the selected depth is no more than 0.25 inch.

1 26. A method of creating a tissue effect, comprising:
2 providing an electro-surgical device that includes an electrode with a cutting edge, a
3 housing coupled to the electrode with a guide that provides for cutting a skin layer and an
4 underlying thickness of subcutaneous tissue while preserving an adjacent plane of tissue;
5 positioning the cutting edge at the skin surface;
6 cutting a skin surface and a layer of an adjacent underlying tissue; and

7 creating a tissue effect.

1 27. The method of claim 26, wherein the tissue effect is formation of a plane of an
2 electrosurgical flap dissection that provides a uniform flap thickness that includes the layer of
3 the adjacent underlying tissue.

1 28. The method of claim 26, wherein the tissue effect is formation of a plane of
2 electrosurgical flap dissection that provides a variable flap thickness.

1 29. The method of claim 26, wherein the tissue effect is a reduced surface area in
2 the plane of dissection due to flap uniformity.

1 30. The method of claim 26, wherein the tissue effect is uniform plane of wound
2 healing with a reduction on volumetric scarring within the plane of dissection.

1 31. The method of claim 26, wherein the tissue effect is thermal tightening of the
2 dissected skin flap.

1 32. The method of claim 26, wherein the tissue effect is a thermal molecular
2 collagen contraction within the plane of dissection.

1 33. The method of claim 26, wherein the tissue effect is a wound healing
2 contraction within the plane of dissection.

1 34. The method of claim 26, wherein the tissue effect is a reduction in iatrogenic
2 surface contour irregularities of the flap surface.

1 35. The method of claim 26, wherein the tissue effect is a uniform release of
2 subjacent soft tissue structures.